Deep Creek Instream Flow

FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

Please fill in the highlighted areas

all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Ron Spoon (Montana Department of Fish, Wildlife & Parks)

B. Mailing Address: P.O. Box 1137

C. City: Townsend State: MT Zip: 59644

Telephone: (406) 266-4137 E-mail: rspoon@mt.net

D. Contact Person: Ron Spoon

Address if different from Applicant: See Above

City: State: Zip:

Telephone: E-mail:

E. Landowner and/or Lessee Name (if other than Applicant): Multiple Landowners and Water Rights

Mailing Address:

City: State: Zip:

Telephone: E-mail:

II. PROJECT INFORMATION*

A. Project Name: Deep Creek Instream Flow Project.

River, stream, or lake: Deep Creek

Location: Township: T6N Range: R2E Section: 8

Latitude: 46.29 834 N Longitude: 111.46 724 W *within project (decimal degrees)*

County: Broadwater

B. Purpose of Project:

The purpose of the project is to legally protect a portion of the water savings created from irrigation projects for instream flow enhancement in Deep Creek.

C. Brief Project Description:

Deep Creek is an important trout spawning tributary to the Missouri River and contains resident populations of Brown Trout and Rainbow Trout. The stream was reconnected to the Missouri River in 1991 when Montana Ditch was placed under Deep Creek to restore fish passage and restore spawning runs. The watershed is approximately 88 square miles and enters the Missouri River upstream of Canyon Ferry Reservoir (Attachment A).

High sediment loading and summer dewatering issues in Deep Creek have been addressed after fish passage was restored in 1991 to ensure that spawning populations of Brown Trout and Rainbow Trout were successful. Three FFIP grants were directed to the stream in the past 20 years to improve sediment and streamflow issues, and the current application is intended to compliment past efforts by legally protecting instream flow.

The goal of the current FFIP project is to legally protect a portion of the water generated from several projects implemented between 2013 and 2015. The irrigation improvement projects eliminated the need for two open ditches which caused fish loss, fish passage problems, and streamflow depletion. Water users were assisted to change their water source from ditches to downstream pump sites or moved completely away from Deep Creek to the Broadwater-Missouri Canal (BMC), which originates at the Missouri River. Approved FFIP projects in 2014 (McArthur Pump Site Relocation and Hahn/Price/Scoffield Pipeline) were successful in significantly improving flow in Deep Creek. An additional project (Flynn diversion change from Deep Creek to BMC) was funded by the landowner and the NRCS water quality initiative without FFIP assistance. A map of project location is presented in Attachment B.

The final phase of the streamflow enhancement project is to legally secure a portion of the water savings from these projects. At least 3 junior water users have activated old water systems in the previously dewatered reach, and it is clear that efforts to restore flow will be impacted by failure to legally secure water. Approximately $2,000,000 was invested in irrigation improvements from 2013-2016, including about $19,000 of FFIP funds.

Irrigation improvement projects generated approximately 5 to 7 cfs of water savings in lower Deep Creek during the summer irrigation season (Attachment C). The goal of this project is to maintain a flow of 3 cfs (dry years) and 5 cfs (wet years) in all reaches of Deep Creek for 10 years (2018-2028), which is the duration of FWP instream leases. After 10 years, depending on evaluation results and landowner satisfaction, the leases will be considered for renewal if allowed by law.

This project would contribute funds to six project components:

1) Lease City of Townsend water right;
2) Assist Flynn Project by paying for partial pumping cost due to diversion change;
3) Lease Davis Deep Creek water right and replace with BMC water source;
4) Provide 300 AF of BMC water to a prospective lessee downstream of BMC (river mile 4.4) and assist HPS pipeline users with legal protection of water rights.
5) Pay operations and maintenance (O&M) costs to Broadwater-Missouri Water Users Association for delivering BMC water to alternative water source projects;
6) Protect water rights of project participants by changing irrigation rights to instream flow (Flynn), City of Townsend, Davis, Hahn/Price/Scoffield (HPS).

See attached concept map (Attachment B) to view layout of projects.

The complexity of replacing Deep Creek water use with Broadwater-Missouri Canal (BMC) water is simplified by understanding that each project participant historically supplied a portion of their croplands with BMC water and no new acres of irrigation occurs in this project. The current proposal validates past and current BMC water use and protects against the need to use Deep Creek water during the 10-year water lease.

To make this complicated concept more understandable, the following is an example of how canal water could be used to legally replace Deep Creek water rights:

A landowner with 300 acres of irrigated land and a Deep Creek water right will lease the creek water right to FWP for 10 years. FWP will replace the Deep Creek water with shares from BMC to irrigate the specific place of use identified in the water right (no expansion) using BMC water. Future Fisheries grant funding would be used to obtain BMC water (currently $6.00/acre-feet for the O&M fee). Water users would not receive water lease payments, but rather, receive BMC water to replace their Deep Creek water right.

Payment to lessees will be made to either BMWUA for water transport, or to an individual lessee depending on DNRC's preference for allocating water to the project. For example, the Davis instream lease will either result in FWP paying BMWUA for transporting water (preferred), or will compensate Davis directly to obtain other sources of existing agricultural shares if DNRC does not allocate water to the project.

EXAMPLE OF REPLACING A DEEP CREEK RIGHT WITH BMC WATER:

- Landowners with irrigated cropland that historically used a Deep Creek water right were approached by FWP.
- Willing landowners agreed to accept BMC water in exchange for leasing the Deep Creek water right for instream flow for 10 years.
- The priority date of the water right at the specific point of diversion on Deep Creek will be protected and the landowner could return to the Deep Creek point of diversion after 10 years.
- O&M cost for BMC water ($6.00/share) will be paid by the Future Fisheries Grant instead of receiving a payment for the water lease.
- The BMWUA agreed to transport this water in exchange for standard O&M charges.

The quantity of legal water protection in Deep Creek will be determined by the DNRC water right change process. Cumulatively, the project is expected to maintain at least 3 cfs in all reaches of Deep Creek year-round. The amount of water protection generated for each aspect of the project at specific locations is detailed in Attachment D A summary of completed or final agreements and one letter of project support is presented in Attachment E.. Despite over-appropriation of many tributary streams in Montana, this project is an example of how to legally establish a summer base flow to prevent complete dewatering of the stream, while maintaining important crop irrigation.

D. Length of stream or size of lake that will be treated: Instream flow protection for Deep Creek from the confluence with the Missouri River upstream 9.5 miles.

E. Project Budget:

Grant Request (Dollars): $ 52,960

Contribution by Applicant (Dollars): $ _____ In-kind $ _____
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): $ 54,000 In-kind $ _____
(attach verification - See page 2 budget template)

Total Project Cost: $ 106,960

F. Attach itemized (line item) budget – see template

G. Attach **specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*** (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach land management & maintenance plans that will ensure protection of the reclaimed area**.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

All aquatic life in the lower 9.5 miles of Deep Creek benefit from flow protection, but Brown Trout and Rainbow Trout are the primary sport fish species in the stream.

B. How will the project protect or enhance wild fish habitat?:

Wild fish abundance in Deep Creek is currently impacted by summer flow depletion. Flow recovery has improved the fishery and legal protection of this water will provide benefits for 10 years.

C. Will the project improve fish populations and/or fishing? To what extent?:

Trout abundance has improved since 2013 when flow improvements began. The number of brown trout redds increased from 26 per mile in 2011 to 78 per mile in 2016 in a two mile reach of stream below irrigation system improvements near river mile 9.5. Falure to legally protect recent water savings will likely result in fish abundance returning to previous low levels.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Some public fishing in Deep Creek occurs, and this opportunity will improve with flow protection. In addition, large numbers of spawning trout enter Deep Creek from the Missouri River and recruitment of juvenile trout to the Missouri River/Canyon Ferry Reservoir System is expected.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

The maximum water lease period is for 10 years as set by statute. During this period, monitoring of streamflow at target locations will document lease compliance. A water commissioner has been used at Deep Creek for the past 3 years, and is expected to be in place during the 10 year lease period to enforce legal protection of priority dates.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

On paper, Deep Creek has approximately 180 cfs of water rights for irrigation and summer streamflow above most irrigation is generally less than 20 cfs. This is a common issue of over-appropriation of tributaries in Montana. The FWP instream flow recommendation for Deep Creek is 9 cfs, which maintains a healthy environment for aquatic life. This project attempts to maintain 3 to 5 cfs during periods high irrigation demand to prevent dewatering impacts. In short, despite over-appropriation of the stream, this approach legally attempts to establish a summer base flow to prevent complete dewatering of the stream.

G. What public benefits will be realized from this project?:

In addition to improved aquatic health, multiple water users and landowners will have clarity on the question of how much water should remain in the stream during periods of shortage. Legal protection of water using priority dates of water rights helps users plan for periods of shortage. The angling public benefits from the improved health of the stream and increased fish population without impacting the historic water users.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No. The DNRC water right change process will be used to change irrigation use to instream use. This process is designed to prevent harm to other water rights on the system. The water leasing project will have the same effect on junior water users that the existing senior irrigation water right would have when the water commissioner enforces the instream rights to limit their use during periods of shortage.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

The project is not intended to develop commercial use of the improved fishery.

J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: _____ Date: 11/27/17

Sponsor (if applicable): _____

***Highlighted boxes will automatically expand.**

Mail To: Montana Fish, Wildlife & Parks
Fisheries Division
PO Box 200701
Helena, MT 59620-0701

E-mail To: Michelle McGree
mmcgree@mt.gov
(electronic submissions MUST be signed)

Incomplete or late applications will be rejected and returned to applicant.
Applications may be rejected if this form is modified.

*****Applications must be signed and *received* by the Future Fisheries Program Officer in Helena *before* December 1 and June 1 of each year to be considered for the subsequent funding period.*****

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Deep Creek Instream Flow

Both tables must be completed or the application will be returned

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
Personnel* **								
Survey				$ -				$ -
Design				$ -				$ -
Engineering				$ -				$ -
Permitting				$ -				$ -
Oversight				$ -				$ -
				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Travel								
Mileage				$ -				$ -
Per diem				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -
Water Lease Costs (10 years)								
City of Townsend		Lump Sum		$ 10,000.00	10,000.00			$ 10,000.00
				$ -				$ -
Flynn Pump Costs		Lump Sum		$ 15,000.00	15,000.00			$ 15,000.00
				$ -				$ -
Davis Lease (canal replacement water)	700 ac-ft	acre-feet	$6.00	$ 42,000.00	3,000.00		39,000.00	$ 42,000.00
				$ -				$ -
Lower Deep Creek Lease (canal replacement water)	300 ac-ft	acre-feet	$6.00	$ 18,000.00	3,000.00		15,000.00	$ 18,000.00
				$ -				$ -
Water Commissioner	160 MI for 75 days	Miners Inch	$0.18	$ 21,960.00	21,960.00			$ 21,960.00
			Sub-Total	$ 106,960.00	$ 52,960.00	$ -	$ 54,000.00	$ 106,960.00
Equipment and Labor								
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
				$ -				$ -
			Sub-Total	$ -	$ -	$ -	$ -	$ -

(Revised 11/27/2017)

Deep Creek Instream Flow

Mobilization										
				$ -					$	-
				$ -					$	-
				$ -					$	-
				$ -					$	-
			Sub-Total	$ -	$	-	$	-	$	-	$	-
			TOTALS	$ 106,960.00	$	52,960.00	$	-	$	54,000.00	$	106,960.00

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). Describe here or in text.

Reminder: Government salaries cannot be used as in-kind match

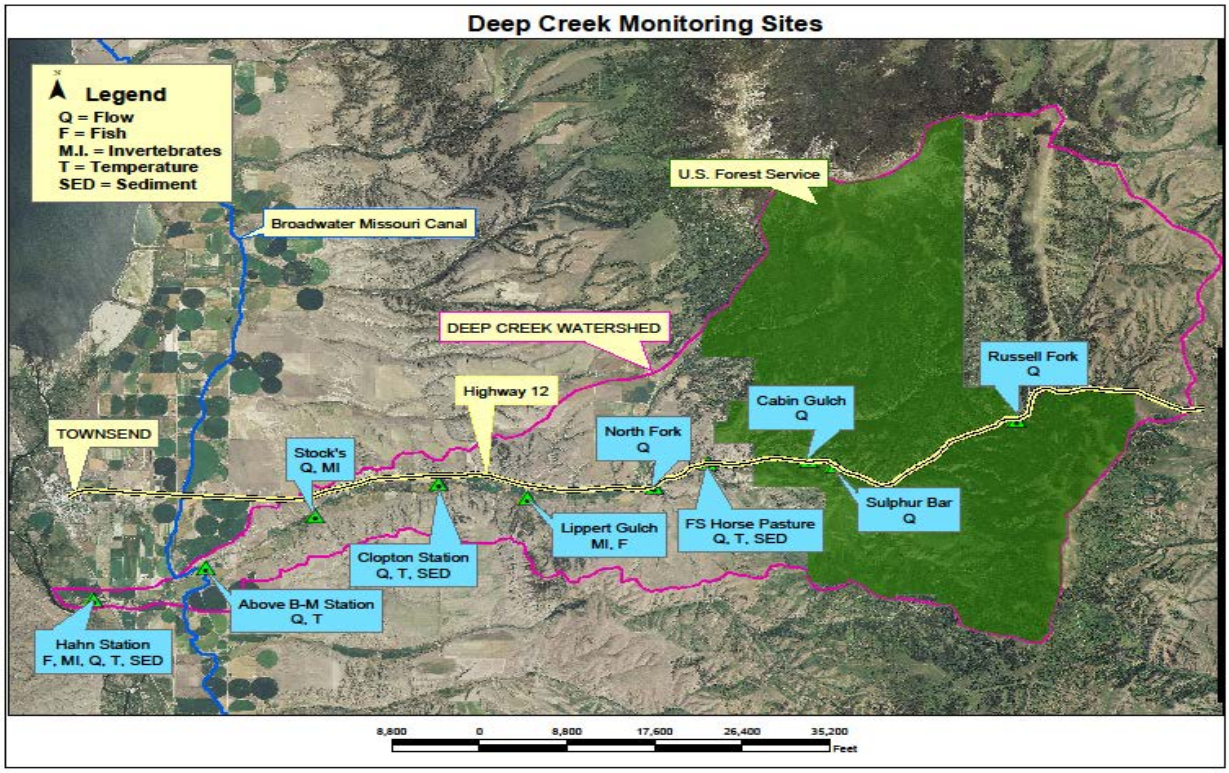
***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project.

****The Review Panel recommends a maximum fencing cost of $1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

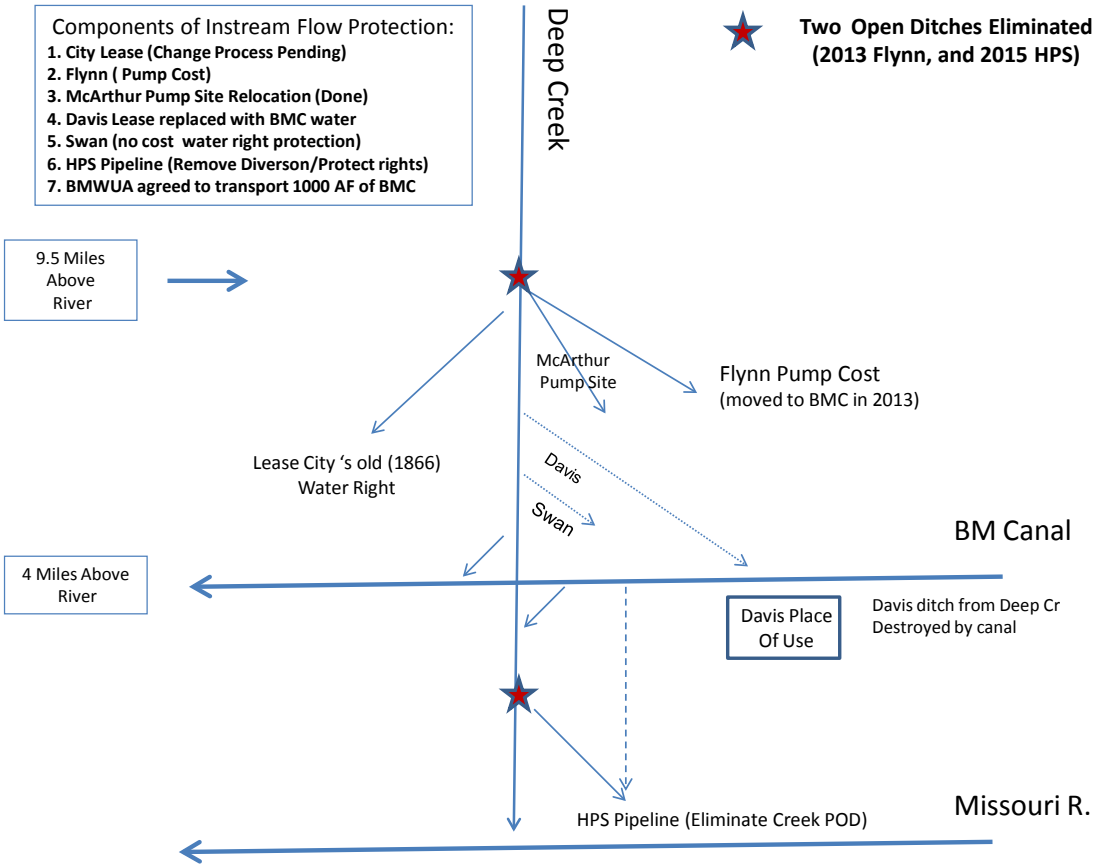
MATCHING CONTRIBUTIONS (do not include requested funds)

CONTRIBUTOR	N-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)
Montana DNRC State Water Projects Bureau	$ -	$ 54,000.00	$ 54,000.00	No
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ 54,000.00	$ 54,000.00	

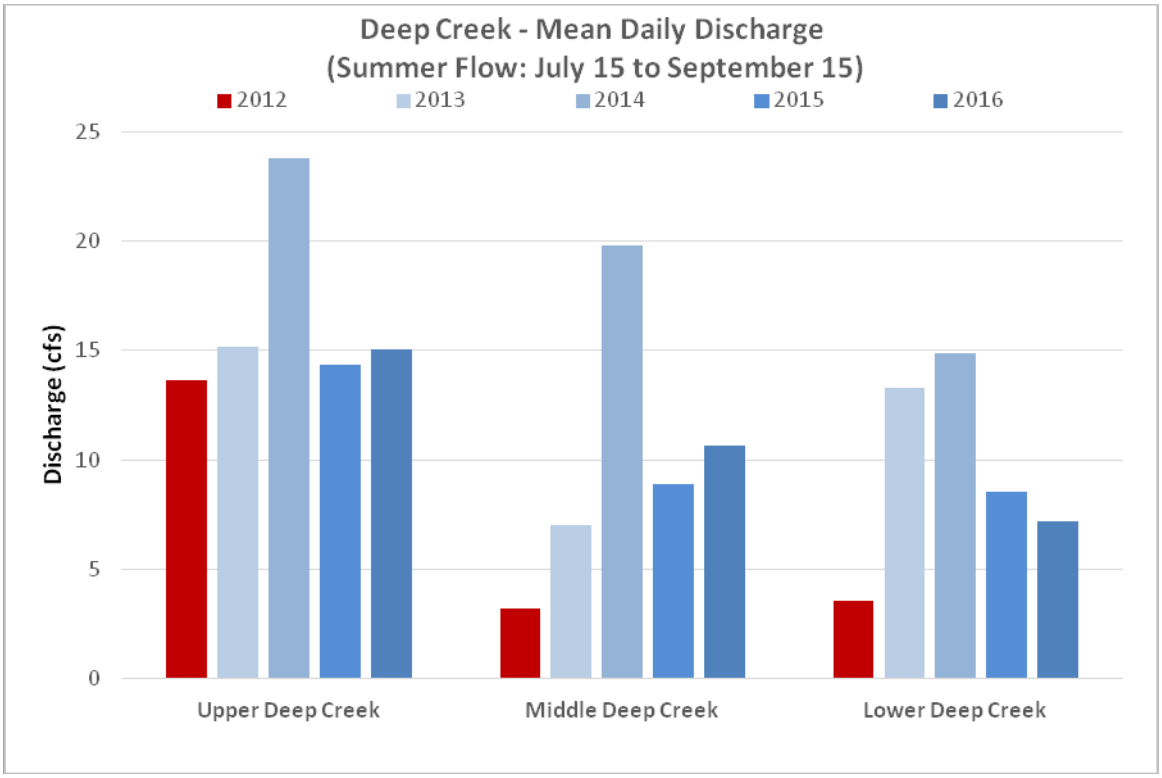
Attachment A: Map of Deep Creek Watershed including monitoring locations.



Attachment B: Conceptual Project Map of Deep Creek Instream Flow Projects.



Attachment C: Summer Streamflow in Deep Creek (2012-2016)
Before (2012) and After (2013-16) Irrigation Projects



Note: All years except 2014 represent dry irrigation seasons with low water supply at upper monitoring station. The Middle Deep Creek station average of about 3 cfs for the entire summer during 2012 included several weeks of flow less than 1 cfs during late summer.

Attachment D: Expected Instream Flow Protection from Water Leases.

Consideration of Senior Water Rights Including "Exchange" Users: Two years of water discussions led to the current proposal to strategically protect key water rights with minimal disruption of existing water use in Deep Creek. The intention of the project is to protect 3 cfs from water generated by recent irrigation improvements. Senior water rights above RM 4.4 include complex exchange rights where water diverted from Deep Creek out of priority are replaced by water from the BMC. FWP agreed with water users to avoid disruption of the exchange agreement. Three years of flow measurement and observations of exchange water rights revealed that actual use (about 8 to 12 cfs) by these users was less than their estimated total allocation (about 14 cfs). In short, the exchange water rights upstream of RM 4.4 are likely compatible with the strategy to maintain 3 cfs throughout the stream during dry years, and future monitoring will be important to assess effectiveness of instream leases.

City of Townsend: Point of Diversion at RM 9.5
Priority Date: 4/1/1866; 4/2/1866
Instream Protection of 0.6cfs above RM 7.5
Instream Protection of 0.3 cfs from RM 0 to RM 7.5 (pending DNRC change)
Cost: $1,000/year

Flynn : Source changed from RM 9.5 to BMC.
Priority Date: 5/2/1891 (5 cfs); 6/11/1903 (5 cfs)
Assist landowner with protection of late priority water rights while using BMC contract water
Assist landowner with increased pumping cost from BMC
Cost: $1,500 per year (portion of pumping cost)

Swan: (Leased by Flynn) Point of diversion at RM 7.3
Priority Date: 5/2/1891 (7.5 cfs)
Assist landowner with protection of late priority water right while using BMC contract water
Cost: $0.00 (in kind FWP for water right change process)

McArthur: Ditch diversion at RM 9.5 moved downstream to RM 6.7 (existing pumpsite).
Eliminated need for open ditch and moved to downstream Deep Creek pumpsite
Cost: $0.00 (Previous FFIP grant to assist with infrastructure)

Davis: Source changed from RM 4.5 to BMC
Priority Date: 5/1/1868 and 3/1/1870(about 4.0 cfs negotiated in recent settlement)
Instream Protection of 4 cfs to RM 4.5
Instream Protection of 1.8 to 4.0 cfs from RM 0 to RM 4.5 (pending DNRC change)
Cost: $4,200/year (700 ac-ft contract water/80% of acres supplied with 2 ac-ft)

Undetermined Lease in Lower Deep Creek Lease (below BMC)
Priority Dates: Multiple (ranging from 4-1-1866 to 9-30-1880)
Cost: $1800/year (pay O&M for transport of 300 ac-ft of water)
Hahn/Price/Scoffield (HPS): Point of Diversion at RM 3.1. Protect water rights after moving point of diversion to BMC in 2015. (Previous FFIP grant to assist with infrastructure)

Attachment E:

Deep Creek Streamflow Enhancement Project Agreements and Letters of Support

The project has 4 agreements in place, and 3 agreements pending:

Completed Agreements:

1) City of Townsend water lease.
2) Davis water lease (700 ac-ft of BMC replacement water).
3) Flynn Partial Pumping Cost.
4) Broadwater-Missouri Water Users water transport agreement for 1,000 ac-ft.

Pending Agreements:

1) Lower Deep Creek (below BMC) water lease/flow enhancement (300 ac-ft of BMC water).
2) HPS pipeline point of diversion change from Deep Creek to BMC (logistics not complete).
3) DNRC approval for allocating fishery mitigation funds ($54,000) to the project, and allocation of water from BMC are tentatively approved.

Patrick Byorth
Director of Montana Water, Western Water & Habitat Project

Montana Fish, Wildlife & Parks
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701

November 20, 2017

Dear Michelle and Citizens Panel,

I am writing on behalf of Trout Unlimited in support of FWP and its partners' application for funding of the Deep Creek Instream Flow project near Townsend, Montana. Based on our experiences in restoring streamflows in dozens of highly appropriated streams across Montana, Trout Unlimited is particularly impressed with the Deep Creek project because it will reconnect Deep Creek with the Missouri River even in drought years while maintaining access to irrigation water for many producers.

FWP and the Broadwater Conservation District have spent years building trust with irrigators along Deep Creek and applied creative problem solving to incrementally bring this important tributary back toward full functionality. The record of success of this collaboration alone makes it worthy of additional FFIP support. On top of that is the increased efficiency of water use which keeps agriculture productive while protecting flows in Deep Creek. Finally, as summers lengthen and our rivers seem to get warmer every year, tributaries like Deep Creek will ensure that fisheries of the Missouri and Deep Creek have a cool water refuge, even in drought years. By taking advantage of warm canal water from a state water project, cool mountain water will flow through to the Missouri.

For many years, Trout Unlimited's Montana Water Program has worked with FWP's field biologists and water program. Watching this group's creativity and dedication to Deep Creek over the years is inspiring to us. We hope you and the panel will be inspired as well.

Thank you for your generous support in perpetuating coldwater fisheries and their habitats.

Sincerely,

Patrick Byorth

Trout Unlimited: America's Leading Coldwater Fisheries Conservation Organization
321 East Main Street, Suite 411, Bozeman, MT 59715
office: (406) 522-7291 • cell: (406) 548-4830 • email: pbyorth@tu.org • www.tu.org

FUTURE FISHERIES IMPROVEMENT PROGRAM

SUPPLEMENTAL INFORMATION SHEET FOR WATER LEASING OR WATER SALVAGE PROJECTS

The following additional information is requested to supplement the Future Fisheries Application for projects associated with water leasing or water salvage. Please complete this supplemental form and submit it as part of the Future Fisheries Grant Application.

1. **Please complete the following table describing the water right(s) associated with the proposed project.** Note: Much of this information can be obtained either from your own water rights records or online at http://www.dnrc.state.mt.us/wrd/home.htm (choose "water rights" and then select an index to look up applicable claims)

RIGHT NUMBER; WATER SOURCE	POINT OF DIVERSION	QUANTIFIED FLOW (CFS)/ VOLUME (AF)/ IRRIGATED ACRES	PRIORITY DATE; PERIOD OF USE	RELATIVE PRIORITY ON WATER SOURCE	PURPOSE OF WATER RIGHT	OTHER CLAIMED ON THE STREAM SENIOR TO YOUR LISTED CLAIMS
41I 4521-00 Townsend	SE SE NE Sec. 36; T7N; R2E	1.93 cfs / 239 acre feet / 91.5 irrigated acres	4/1/1866; April 1st through October 1st	1st priority of 36 priority dates	Irrigation	5.91 cfs total with same priority
41I 214127-00 Townsend	SE SE NE Sec. 36; T7N; R2E	0.16 cfs Same POU as above	4/2/1866; April 1st through October 1st	2nd priority of 36 priority dates	Irrigation	5.91 cfs senior to this right
41I 37797-00 Davis	SW SW SE Sec. 3; T6N; R2E	2.75 cfs / 1,240 acre feet / 476 irrigated acres	5/1/1868; May 1st through October 24th	6th priority of 36 priority dates	Irrigation	28.8 cfs senior to this right
41I 37798-00 Davis	SW SW SE Sec. 3; T6N; R2E	1.88 cfs Same POU as above	5/1/1868; May 1st through October 24th	6th priority of 36 priority dates	Irrigation	28.8 cfs senior to this right
41I 37799-00 Davis	SW SW SE Sec. 3; T6N; R2E	3.0 cfs Same POU as above	3/1/1870; May 1st through October 24th	9th priority of 36 priority dates	Irrigation	36.56 cfs senior to this right
41I 3836-00* Flynn	SE SE NE Sec. 36; T7N; R2E	5.0 cfs / 690 acre feet / 265 irrigated acres	6/11/1903; April 1st through October 19th	28th priority of 36 priority dates	Irrigation	96.08 cfs senior to this right
41I 3838-00* Flynn	SE SE NE Sec. 36; T7N; R2E	2.5 cfs Same POU as above	7/17/1918; April 1st through October 19th	31st priority of 36 priority dates	Irrigation	113.58 cfs senior to this right
41I 49376-00* Flynn	SE SE NE Sec. 36; T7N; R2E	2.5 cfs / 890 acre feet / 340 irrigated acres	7/17/1918; May 1st through October 31st	31st priority of 36 priority dates	Irrigation	113.58 cfs senior to this right

*These rights were part of a water exchange where they were used out of priority with the water being replaced in Deep Creek from the Broadwater-Missouri Canal.

2. In the last 10 years, has your full water right amount regularly been available at your point of diversion throughout your period of use?

The City of Townsend water rights have full water availability due to their senior priority date.

The Davis water rights during dry years have some limited availability during peak demand times, although sufficient water is normally available to supply at lease a portion of the total demand.

The Flynn rights historically took water under the exchange for Broadwater-Missouri Canal water replacing the flow in Deep Creek during most if not all of the irrigation season.

Have you ever made "a call" on junior water users to obtain the water you needed (through a water commissioner or otherwise)?

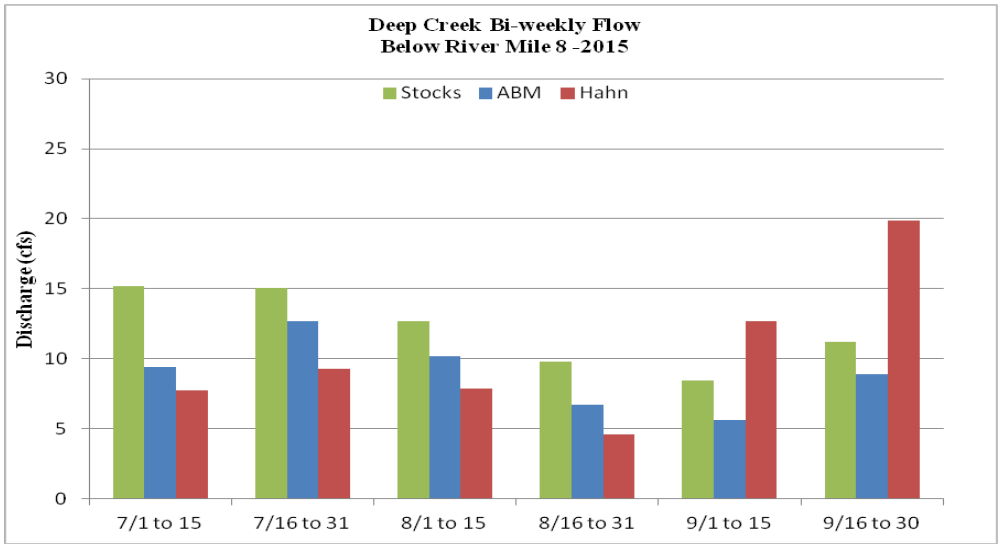
Up in to the 1970s as well as in the last two years a water commissioner has distributed water from Deep Creek.

3. Please describe or include a summary of any measurements of the amount of water you have regularly diverted and how much typically flows by your diversion during different time periods.

City of Townsend: No recent measurements taken due to inactive diversion for several years.

Flynn: One year of diversion amount quantified in 2012. Both McArthur and Flynn were diverting in 2012 and withdrawal ranged from about 5 to 10 cfs during the irrigation season, which essentially dewatered the stream in August and early September.

Davis: Davis diversion has not occurred from Deep Creek for several years and water was obtained from Broadwater-Missouri Canal under informal arrangements. Without the FWP lease, Davis will begin to divert from Deep Creek at river mile 4.5 and the diversion will generally take most or all of the remaining flow during August and early September. Average summer flow (July 15-September 15) at the Davis point of diversion ranged from 6 to 11 cfs during dry years (2013, 2015, 2016). Low flow during August, however, was frequently less than 6 cfs is this point of diversion below this diversion (see example from 2015 where ABM Station is located immediately below the Davis diversion).



Stocks at RM 8.4 (below Flynn Diversion). ABM at RM 4.4 (below Davis Diversion). Hahn at RM 0.6 (supplemented with BMC water).

4. Has your local FWP fish biologist confirmed that your leasing/salvage project addresses a stream flow problem that significantly limits the fishery?

Yes

5. How much actual water (often different than just the remainder of your water rights) will be added to the stream through completion of your project?

2.1 to 4.3 cfs is the expected range of consumptive use that can be protected under the City of Townsend and Davis water leases. The amount depends on how much return flow DNRC attributes to the Davis rights.

The Flynn water lease is intended to protect the junior water rights as the source has been switched to the Broadwater-Missouri Canal. This source switch has reduced the demand on Deep Creek making the Davis water lease a viable means to protect instream flow.

What length of stream will benefit from this additional flow? (Note: Under certain circumstances, senior water can be protected legally from diversion by downstream junior users.)

9.5 **miles (please fill in or describe)**

6. Is there a water commissioner on your stream?

Yes

Are you willing to actively assist in monitoring and/or protecting the conserved water instream?

Yes